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Dr H. Jenner
From the Author

A

LETTER

TO

CHARLES HENRY PARRY, M.D. F.R.S. &c. &c.

ON THE INFLUENCE OF

ARTIFICIAL ERUPTIONS,

In certain Diseases incidental to the Human Body,

WITH AN INQUIRY RESPECTING THE PROBABLE ADVANTAGES TO BE DERIVED FROM FURTHER EXPERIMENTS.

By EDWARD JENNER, Esq. M.D. LL.D. F.R.S. M.N.I.F. &c. &c. &c.

AND

PHYSICIAN EXTRAORDINARY TO THE KING.

LONDON:

PRINTED FOR BALDWIN, CRADOCK, AND JOY,
PATERNOSTER-ROW.

1822.

91912

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London: Printed by J. Nichols and Son,
25, Parliament-street.

A LETTER

TO

CHARLES HENRY PARRY, M.D. F.R.S. &c. &c.

ON THE INFLUENCE OF

ARTIFICIAL ERUPTIONS.

My dear Charles,

In our conversations formerly, you must recollect my having frequently proposed, as a topic of consideration, what might be the influence of pustular eruptions artificially excited, in many diseases incidental to the human body.—Permit me now, without further preamble, to call your attention more particularly to this subject, by laying before you a series of Cases, which have passed under my own eye, and those of others, on whose testimony I could depend. The application I have selected for the purpose is the same, as you are aware, I had used some time before, Emetic Tartar. But though, by references, I find I could go back to the year 1794, yet my experience on this subject was confined within a boundary too narrow to enable me to bring forward facts, for public information, that were sufficiently interesting. You will ex-

cuse me if I amplify as I go along, by endeavouring to point out the physiological principles on which the application acts in destroying the roots which give birth to many diseased actions in the animal economy, in a way more manageable than any other at present developed.

CASE I.

Mr. ——, ætat. 60—Was first a seaman, but quitted his profession and settled in a neighbouring town more than twenty years ago. His general health has been good during this series of years, with the exception of occasional interruptions from what is termed sick head-ache. For the last two or three years his mind was strongly bent on a mechanical pursuit, and his expectations raised high on the result.—Disappointment followed, which plunged him into a state of despondency, from the apprehension of poverty, although he possessed the most ample means. From this state of hypochondriasis he became more decidedly insane, and at the expiration of three months, a perfect maniac. The space of time from the accession of the malady to its becoming decided insanity, was about three months. He went through the ordinary routine of treatment in these cases, under a judicious medical gentleman in the same town, who reported to me the outline of the case, and that his bowels were then so torpid as scarcely to feel the effect of the most active cathartics; for example, he often took latterly gr. xx hyd. submur. and the same quantity of pulv. jalap. without any perceptible effect. He had been bled largely from

the arm, and local bleedings by leeching and scarification had not been used sparingly. He also took nauseating doses of emetic tartar, but none of his symptoms yielded to this treatment. A physician, whose peculiar province it is to attend patients in this unhappy situation, was now consulted, and a proper person sent from his asylum to superintend the patient. The prospect now became gloomy and alarming in the extreme, and I directed for him, with the view of arousing the peristaltic motion of the bowels, a strong solution of common salt, with a portion of mustard, to be thrown up in the form of clyster, but all our efforts to assist him in this way were unavailing, and it was supposed he must quickly perish. I was again consulted, and in this dilemma proposed to try the result of an application which would produce specific eruptions on the skin. A dram of tartar emetic was involved in an ounce of simple cerate, and a portion of it was rubbed on the inside of the arms, night and morning, from the elbow joints to the wrist. Papulæ of some magnitude were produced, and a serous fluid began to be visible on their apices about the third day, when amendment became perceptible, and advanced so rapidly that the transition from derangement to health was almost inconceivable. Twelve months have now elapsed, and he has had no symptom of a return of the complaint.

CASE II.

—— C. Esq. ætat. 75—Had lived freely, and was formerly the subject of carbuncular tumor between the scapulæ; his con-

stitution is feeble from age, and the consequences of his previous habits of life. Sometime ago he was seized with a severe attack of cholera morbus, from which he soon recovered, but his intellects became much confused, and his malady continued progressively increasing during the space of several weeks. The remedies usually resorted to were unavailing, when the medical practitioner, acting under my instructions applied the tartar emetic ointment to the nape of the neck, and between the shoulders, avoiding the situation where the carbuncle had formed. The gentleman who communicated the result states, that soon after the eruptions were produced the patient rapidly regained that sane state of mind, which, as far as unconnected with age and natural decay of the faculties, he had formerly possessed.

CASE III.

Edwin Daw, ætat. 17.—A tall thin youth. His hair and eyes light, and his complexion fair. I was desired to see him, under the impression, from the account given by his medical attendants, that his case was hopeless, as he was in the last stage of pulmonary consumption; and thus, apparently, I found him. His general hectical aspect, his state of emaciation, his occasional flushed cheek, his manner of breathing, the appearance and quantity of what he expectorated, the anasarcous swelling of his legs and thighs, and even the inferior portion of the abdomen, a daily exacerbation of fever, a constantly quick pulse, and a florid tongue, corroborated this report. Superadded to this it may be necessary to

mention for your consideration, that in the course of the preceding fortnight there was a perceptible enlargement about the centre of the left side of the thorax, giving the appearance of a little protusion of two or three of the ribs, but which, on examination, afforded no correct information. It seems he had for some time taken the digitalis and other medicines held in most estimation under similar circumstances. I directed these to be continued, and only recommended the pulv. ipecac. comp. to be joined with the digitalis with the view of soothing the cough. At this period his debility was so much increased that he was confined wholly to his bed, and unable to change his position without the assistance of his father. To engage his mind, and not with the expectation of his ultimate recovery, the ointment was rubbed on the protuberant part until pustules were produced, which was effected within two or three days. Within a week I thought some amendment was evidently perceptible with regard to the cough and some other distressing symptoms, and the patient thought so too. The application was continued with the view, though somewhat painful in its effects, of keeping the pustules in full activity. At the expiration of a fortnight perceptible absorption of the anasarcous effusions had commenced; the general bad symptoms had considerably abated, and his looks were much improved. From this time his convalescence was rapidly accelerated, so that within six weeks no apparent vestige of the disease remained, and he began to renew his ordinary avocation of working with his father as a stone-cutter. As in the protuberance there was a deviation from ordinary consumption, it might be imagined that it was a formation of matter contained in a

sac, which had spontaneously burst, and that the recovery might be attributed to salutary changes brought about in consequence; but I never found, during the progress of his recovery, any occurrence to warrant such a supposition. It might indeed have escaped into the cavity of the thorax, but there were no symptoms of any such event. I can hardly conceive this to be a case of tuberculated consumption, though I never saw symptoms which so exactly accorded with the last stage of that disease. He continues free from any indisposition, and follows his employment with great ease, although he is a *little* devoted to ebriety, and, strange to tell you, after his recovery, he made his first grateful sacrifice not to JOVE but BACCHUS. I have here represented the case as it existed, without wishing it to be inferred, that I deduce from it that the external application of tartar emetic will prove a remedy for tubercular consumption *.

CASE IV.

Mrs. H. of this place, ætat. about 54—Has been the subject of severe attacks of spasmodic asthma. She has used the ointment on the nape of the neck, since which the returns have been more slight, and the intervals between one attack and another more lengthened. The application was not extensive.

* It will appear elsewhere that I have considered the *hydatid* as the source of tubercle, and consequently as giving birth to those tubercles which destroy the lungs in true phthisis pulmonalis. From the vague and unsubstantial opinions lately given by various authors one would suppose that the luminous work of my friend Doctor Baron on this interesting subject, had never appeared.

CASE V.

SAMUEL HARRIS, ætat. 47, Mariner—Was suddenly seized, about the end of January, with inflammation of the right eye. It was not so violent as to prevent the pursuit of his employment for nearly three weeks, when a chill came on daily between three and four o'clock. About half an hour after each attack, a pain seized the right side of the head, principally about the orbit of the eye, extending in the course of the temporal muscle. It continued to return every afternoon at a certain hour, and at length became so violent as to deprive him of sight and intellect. In one of the paroxysms he grew enraged with his wife, because he supposed that she had not lit him a candle, although one was burning before him. These periodical attacks became marked in the end with raving madness. In a paroxysm, with extreme severity of pain, he was at the point of destroying one of his children. He was bled from the arm, leeched, and took purgatives up to drastics, but they took no effect upon the malady. Seeing the impression which tartar emetic had made on affections, connected with a disordered state of the brain and nerves, I did not hesitate to direct the application of the ointment, and it was applied to the left arm. Pimples followed in twenty-four hours, and as soon as they became acuminated, and *contained a little limpid fluid*, the patient found ease; the pain continued to abate, and at the end of *three days it was quite gone*. He continues well. This man, like many others who ply as mariners on our river (the Severn), was a hard drinker.

CASE VI.

ZEB SELMAN, ætat. 12.—He had been ill for six months with the symptoms of that disease which is termed chronic hepatitis. His liver felt generally enlarged, very much indurated, and sensible to the touch. He was seen at an advanced period of the complaint by a physician of acknowledged high abilities. This gentleman is reported by the patient's friends to have said, that if he had seen him at the commencement of the disease, the chances would have been *seven* to *one* against him, and now would be *ten* to *one*. The cachectic appearance and general emaciation were certainly such as indicated the probability of a fatal termination, and, if I had given an opinion, it would perhaps have been similar. At this period of the progress of the complaint the ointment was applied with the usual cutaneous effect; after which he recovered with astonishing rapidity, and no vestige of the induration or enlargement within the abdomen remains. Mild aperients, which he had been in the habit of taking, were used during his indisposition.

CASE VII.

JOHN EVERETT, ætat. 21, with light hair and thin delicate skin. —He exerted himself very much in harvest work, and drinking beer after a day of hard employment, was seized with a pain shooting from the diaphragm obliquely upwards to the left side, near to the region of the heart, particularly exasperated by casual motions or

jarring of the trunk. He described these pains or spasms by the common phrase of "*stitches* in the side." Together with these symptoms he had spasm of the œsophagus in swallowing food, which rendered its passage painful and difficult. He also complained of difficulty of respiration, and deep-seated pain in the head. His pulse was quick, and his tongue discoloured. Though every evidence existed of a disordered state of the digestive and respiratory organs, and of the functions of the brain, yet it did not appear that the secretions were much deranged. In this condition his legs became covered with a spontaneous eruption, consisting of large red protuberances, which suppurated and poured forth pus. These have left copper-coloured defædations as broad as a shilling, principally about the extremities, like some varieties of the eruptions produced by mercury. As he never recollects having taken, or had occasion to take mercury, it cannot be attributed to that cause. These eruptions were accompanied with violent inflammation of the tunica conjunctiva of each eye. Neither venæsection nor the application of a blister, which latter acted properly, relieved the symptoms. Antimonials were taken, and the ointment was used with its full effect on the skin, and the antiphlogistic regimen enjoined. Though a stout young man, he was now totally incapacitated for labour. Bandages were applied to heal the ulcers on the legs, not without attention also to proper surgical treatment in other respects. After this combined plan had been carried into effect, his recovery began to advance, but he remained, for some time after convalescence, so much enfeebled as to be unable to return to his usual avocations.

CASE VIII.

Ann Serjeant, of Kingswood, ætat. 15, (June 25, 1820,)—About ten weeks since was suddenly frightened by a person speaking sharply to her. Her whole frame became affected with nervous sensations, and in four weeks afterwards a partial hemiplegia seized the left side. In addition to these symptoms she had chorea, affecting certain muscles of the arms and neck, and she had also slight convulsive fits, about fifteen times in twenty-four hours, after which she was accustomed to fall into a stupor, with her eyes fixed. She could hear sounds confusedly, but every thing immediately directed to the ear was perfectly unintelligible. She persevered in the usual medicines for a month or six weeks, without advantage. I then ordered the ointment to be applied, in the line of the cervical vertebræ. I saw her soon after the application was made, and found her evidently amended in every respect. She took occasionally a small dose of jalap and calomel. Her mother now, as the distance was considerable, ceased to bring her, but sent to inform me that she was quite well.

I may observe here, that this girl exhibited a curious illustration of my opinions respecting involuntary, and indeed voluntary, muscular exertions. The right arm was frequently thrown into action during the day. If it was held so forcibly as to restrain involuntary motion, the jugular veins were observed to swell, and she fell to the ground if the arm was not set at liberty. Muscular exertion,

which tends to equalize the circulation, may here be involuntarily called into violent action, for distributing a preternatural quantity of blood thrown upon the brain during the paroxysms, and which, if impeded, would be followed by consequences injurious to its structure. This remark admits of extensive illustrations, which would lead me too far from my present path of inquiry, were I to go into them. I would just notice not only those *involuntary* and sudden motions which we designate by the term "fits," whether epileptic, hysteric, or whatever they may be, but also the *voluntary* motions, when the brain has become turgid from any adequate exciting cause, produced under various modifications of vehemence, from the thump on the cushion to the contortions of the orator, as so frequently exemplified within the walls of both Houses of Parliament. How well do I remember the strong and characteristic action of the late Messrs. Fox, Pitt, Grattan, and a host of public characters.

You may say, my dear Charles, that this case is equivocal; and I am not averse to admit that inflammatory action, excited in any manner in the line of the spine, *might* have produced the same salutary effect.

CASE IX.

Mr. Fewster's Patient, a young woman.—This was a case of mania. My inquiries were particularly directed to the probable circumstance of its being preceded by hysteria; but the answers

negatived the supposition. Her ravings were violent. Leeches were applied about the head, and the ointment upon the leech bites. As soon as vesicles appeared she was well. The directions given for the continuation of the use of the ointment were not attended to, and she soon again became decidedly maniacal. The ointment was re-applied with the same cuticular effect, and she completely recovered. Such is the outline furnished by my medical friend Mr. T. Fewster, of Thornbury, a gentleman of long and extensive experience in his profession.

CASE X.*

Elizabeth B. æt. 23 years,—Was delivered of her first child Nov. 25, 1820. She has been occasionally subject to hysteria. The second day after parturition she became suddenly deranged, and totally unmanageable, obstinately refusing to take food or medicine. The ointment of tartarized antimony was then rubbed along the inner surface of the fore arm, from the joint to the wrist; but a fortnight had nearly elapsed before a vesiculated eruption was brought out†. This, I presume, might be in some degree assignable

* These two Cases, X and XI, were communicated by Mr. Fry, Surgeon, a gentleman in extensive practice at Dursley, in whose integrity, from long intimacy, I can always confide.

† This torpor of the skin is not unusual in cases of this description; I have met with it many times in my practice. I once put setons into the temples of a Lady who had hysteria, with occasional aberrations of mind: at the end of ten days, no inflammation, swelling, or discharge, had commenced. The same circumstance has, however, been noticed by others.

to the attendants, who were irregular in applying it. As soon as the eruptions appeared, amelioration of her symptoms was evident; she was kept under the influence of the ointment nearly three weeks, during which time she progressively improved. About ten days after the appearance of the primary eruptions on her arms, similar pustules appeared on her back. I saw her this day (Jan. 6, 1821); she appeared perfectly well. The eruptive action had subsided. During the use of the external application she took an occasional purgative, and she had also a solution of the antim. tart. to take internally in nauseating doses, but her friends found so much difficulty in getting her to swallow any thing, that I believe it to have been so far relinquished, that her restoration may be chiefly imputed to the ointment. It may be right to observe, in elucidation of this individual's complaint, that she is an unmarried woman, and in consequence of seduction, with rather a delicate mind, she suffered great mental anxiety during the latter part of her pregnancy.

CASE XI.

Charlotte Halloway, ætat. 20,—During the last two years has been occasionally subject to great dejection of mind, which generally lasted for a week or ten days at each recurrence. This depression was almost invariably succeeded by an unnatural excitation of spirits, but never by incoherent expressions or actions. About the middle of November 1820, without any seeming immediate cause, she became suddenly and completely insane. The antimo-

nial ointment was rubbed upon the inside of her fore arms, and at the end of four days, the usual eruption appeared, and she *immediately* became much better. The application of the ointment was then neglected, the eruptions began to die away, and she had a recurrence of insanity, but not so violently as on the first attack. Recourse was again had to the ointment, and a fresh crop of eruptions was produced within the space of four days. She then gradually got well, and has continued so to the present moment (Jan. 5th, 1821).—Her own statement to this effect is confirmed by her mother, who says, that she is in better health than she has been for the last two years. The original vesicles are now exsiccated, but the scabs have not separated; some are yet scattered over her body.

Feb. 16th. She has again relapsed. The ointment had succeeded in the previous relapses, and the influence was such, after a crop of pustules had been produced, that if kept up she would probably have completely recovered, but the parents relinquished it with a singular indifference, and have since been endeavouring to get her into St. Luke's Hospital.

CASE XII.

Mr. R***, a young man in trade, connected with the shipping. —Hypochondriasis.—He complains of an affection of the head of twelve months standing; and had it not been for the assistance of a partner he would have been incapacitated for following his ordinary employments. He occasionally loses his reason, but his

aberrations are not of long duration, varying from twelve hours to two days; at best, however, he is seldom quite free from mental alienation. His countenance is pallid, bowels irregular, urine high coloured, flatulent, with heart-burn, and quick pulse. He was last under the care of a physician of eminence at Bristol, who appears to have treated him judiciously. He is directed to take the pil. hydrarg. and aloes, with a dose of magnesia and creta twice a day. At the same time he is to use the ung. antim. tart. on the pit of the stomach.

Feb. 10, 1821. Mr. R. is better in every respect. The vesications from the action of the tartar emetic are both numerous and perfect; and I think that the abatement in the cerebral symptoms has been commensurate with their formation and progress. He describes his general sensations as having been considerably relieved, or, as he expressed it, "much pleasanter," after the appearance of the eruptions. It is right to observe, that I thought fit at the same time to continue medicines which he had taken habitually to keep up the secretions of the abdominal viscera.

Feb. 15. He continues free from all the previous urgent symptoms of his complaint. He has kept the pustules in action upon the skin, by repeating the applications, and persisted in the use of the magnesia and aperient pills. Some eruptions have made their appearance under the cuticle, upon the palms of the hands, and on

the scrotum *. The latter being troublesome, he is directed to use the Unguentum Zinci as an application.

Feb. 20. He is so much better that he is now almost free from indisposition, and wishes to know whether he may resume his ordinary occupations.

CASE XIII.

Mary Smith, ætat. 21,—In the winter of 1819 was affected with pyrosis. Soon after she had cough with difficult respiration, and pain after swallowing in the region of the stomach. Her food passed off imperfectly digested, and her evacuations were mingled with slimy matter. She has felt pain at different periods of her complaint, shooting in various directions, apparently among the abdominal viscera, particularly under the edges of the ribs on the left side. I have invariably found her pulse very quick, and her heart frequently palpitates. She has had profuse hæmorrhages from the lungs. On the first seizure, she brought up more than a pint of blood. Venesection was used, but without alleviation. I saw her at the time I received this narrative, and directed for her the oxyd of bismuth, according to the plan brought forward by my friend Dr. Marcett. It produced its usual good effects, though they proved but temporary. Whilst bismuth was used internally, the ointment was rubbed on the inside of one of her arms, near the wrist, and with its usual effect on the skin; yet she had frequent

* See a coincidence observed by Dr. Robinson, quoted pages *seq.*

relapses, attributable chiefly, I conceive, to the situation she had been doomed to dwell in, a parish workhouse. However, this being known, her food and lodging were rendered more comfortable, and better adapted to her situation *. The consequence is, a more perfect freedom from the whole train of morbid symptoms which had so long harrassed her; and it is worthy of remark, that when any threatening feeling takes place, she almost instinctively has recourse to the application of the ointment, and never (as she declares) without obtaining the relief she seeks for. The case never assumed the character of genuine tubercular consumption, but consisted in chronic inflammation of the mucous membranes of the bronchia and intestines with pyrosis, and cough like the tubercular, which is so frequently concomitant with the latter (pyrosis). The many symptomatic derangements of other viscera which attended this case, and which abound in all similar cases, afford a satisfactory diagnosis between it and *idiopathic* phthisis. We may infer, from the partial influence of the ointment in this instance, how useful an auxiliary it may prove in complicated constitutional cases, where entire success cannot be expected to be a result of its application †.

* It is to be lamented that the opulent, in most countries, pay so little attention to these abodes of wretchedness. When sickness and poverty unite, no uncommon union here, let those who have felt the *one* (and who has not felt it?) conceive, if they can, the situation of a sufferer, when united with the *other*. See an interesting little work from the philanthropic pen of the Rev. Richard Worthington, M. D. "for bettering the condition of the sick Poor."

† In a patient who has suffered from obstinate general derangement, and atony of the digestive organs, with cough, constant feeble respiration, and disposition to sore throat, the ointment had the singular effect of relieving the cough and respiration, but at the same time of *apparently* re-producing the sore throat, after each application. It is possible this might be coincidence.

Trials far beyond the limits of my present practice will, however, finally determine this point. It is hard to define what membranes sympathise most with this action of tartar emetic, but it is clear that mucous membranes sympathise very conspicuously.

June 20, 1821. This patient now is almost free from any symptoms of deranged health.

CASES XIV. XV.

The two following Cases are thus briefly reported by a Medical Gentleman in my Neighbourhood.

"In the case of Miss A. a young woman, symptoms of hysteria and hypochondriasis have manifested themselves for more than a year past, latterly verging to that extreme in which hysteria glides into insanity. I directed the antimonial ointment to be rubbed on the arm, and I am happy to give testimony to its favourable effects, by saying, that she is decidedly convalescent. Various remedies had been before exhibited, under the direction of several medical gentlemen, but without any constitutional amendment.

"Mrs. G———, from Birmingham, afflicted with despondency, bordering on insanity, has been treated successfully with the ointment principally; and now only labours under slight and occasional symptoms. Being so much better she is gone from hence, and is no longer under my care."

Feb. 18, 1821.

CASE XVI.

Mr. Frankis, Slimbridge, ætat. 37,—Has been very corpulent, and for some years much disposed to hard drinking, especially ardent spirits, the use of which he is not entirely capable of resisting. He caught cold in consequence of sleeping in an open carriage, exposed to a damp air, and previously drinking cold cider when he was warm. He has had hæmoptoe; and a considerable quantity of blood has been expectorated at several times. His respiration is now very quick and difficult, with cough and expectoration of very inspissated phlegm. His pulse is quick. He has been bled repeatedly during his illness, which has been now of thirteen weeks duration. This, and some medicines which were prescribed for him, have given relief to the chest. Besides occasional aperients, and a mild linctus, the form of medicine now prescribed consists in a combination of pil. scillæ co. and pulv. ipecacuanhæ co. He has, last of all, used the ointment, which has excited a very irritative crop of pustules on the chest. Since they have been fully formed, and have discharged, he has found great relief of respiration, but not so decidedly of the cough.

June 12. A month has elapsed since the former note was taken. He continued the pills until their effect seemed to diminish. The pustules on the chest continue to suppurate. His respiration, cough, and general strength, are greatly improved. He

sometimes spits very small quantities of blood in the morning, which has been long his habit. His pulse was never below 100 during his former symptoms; it is now about 80, and strong. He feels on the whole so much better, that he expresses great confidence in his recovery; but this, I own, from his long-continued bad habits, is more than I feel myself.

CASE XVII.

Communicated by Mr. Fry.

Mr. William H. about 40 years of age,—For twenty-five years has been subject to pulmonary affections. He has a very thin delicate skin, and possesses manifestly the true phthisical diathesis. When young, he was subject to a very alarming hæmoptysis, of which he recovered, and has enjoyed an improved state of health, though nothing like exemption from pulmonary disorder. After being severely indisposed with affections of the chest, *viz.* cough, and impeded respiration; he was seized, last summer, with a dangerous recurrence of the hæmorrhage. It was concluded that he had pulmonary consumption in the last stage, and the case afforded every indication of terminating fatally, but the hæmoptoe, which became more and more violent, was at last arrested by superacetate of lead, and the tart. emet. ointment was applied to the chest. As soon as the eruptions vesiculated, he got better; when they died away, he began again to feel uncomfortable about the chest, complaining that he felt "plugged up in breathing." He finds immediate ease by a renewal of the erup-

tions, and has, in consequence, continued under their influence for nearly twelve months past. His skin is so irritable, that pimples almost immediately follow the application, though in some individuals three days will elapse before they will be excited. The ointment gives him most relief when applied to the opposite side of the chest to that most affected.

CASE XVIII.

JOHN GAY, 39 years of age,—Was taken ill about four months ago, with feelings of languor and nervous debility, accompanied with dyspepsia, bilious and acid eructations: he had also pain in the right hypochondrium, dry sore throat, and general feverishness. With these symptoms he had pyrosis. His complaint continued to grow worse, especially a dull pain which had been going forwards in the region of the liver, till he was seized with symptoms of complete obstruction of the common duct of the gall-bladder. His skin became tinted with a deep blackish yellow colour. The food and medicines which he took, for some time after the symptoms of obstruction, regurgitated in an unaltered state, from the stomach. He found great difficulty in procuring medicines, from different medical men, that would act on his bowels. In this emergency, scanty evacuations of slime were procured by the administration of clysters; but he passed no solid stercoraceous stools; pills of soap and rhubarb, combined with an aromatic, and also the ointment, were now prescribed for him. Pimples appeared within twenty-four hours. These suppurated, and

discharged pus with unusual freedom, and disposition to continue to discharge. About the time at which the pustules appeared, a sudden burst of evacuations took place, consisting first of bilious coloured fluid, next of slime of a green hue, and an abundance of shreds of a skinny appearance. In his first stools, at this time, my patient observed a mass, which he conceived to be food and medicines which he had taken previously, and had remained unaltered in the alimentary canal. The pain in his right shoulder and right hypochondrium abated rapidly, and his stools came away more solid, but still enveloped in slime. He is now convalescent, but tender under the margins of the right ribs, and possessing a mitigated degree of unhealthy action about the liver. As his health *improved*, the eruptions evinced a *disposition to dry up*, but they have been continued. He had, four years ago, a constitutional sore, which has occasionally healed and re-appeared: its final suppression may have had some connexion with his present complaint. His recovery went on and was perfected in far less time than I could reasonably expect, considering the extreme state of debility to which he was brought by his long and severe sufferings. Within six weeks he resumed his laborious occupation which was that of a sawyer.

Such, my dear Charles, is a sketch of Cases in which the practice has for the most part been attended with successful results.

These trials of the influence of vesiculo-pustular eruptions excited by means of tartarized antimony, have as yet been limited, but I trust the general favourable results of the experiments made, will apologize for my hazarding a few physiological hints for the consideration of those, who may think a wider basis to work upon desirable. In many points I can have nothing to offer, save in the form of speculation, but I hope you will not discard my Letter until you have sufficiently reflected upon what I submit to your consideration, and you will then perceive that I make my stand on my favourite pedestal, analogy.

There was a period at which an inquiry into the effects of the application of tartarized antimony in some diseases appears to have been made, and to have excited considerable interest. It is difficult to conjecture the reason of the chasm which took place in the inquiry. At all events it has been vaguely pursued. At the time to which I allude, 1773, two papers appeared in the Memoirs of the Medical Society of London, on the external application of tartar emetic; the first had for its object, to deny the possibility of its external absorption*; but the second communication by Dr. Bradley contains some interesting observations on its influence in rheumatic affections, for which it had been previously recommended to the Society †.

* "Observations and Experiments on the external Absorption of Emetic Tartar and Arsenic. By William Gaitskell, Surgeon, Rotherhithe," pp. 79.

† "Observations on the external use of Tartarized Antimony. By Thomas Bradley, M. D. and F. M. S." pp. 247—252.

"In these cases," said Dr. Bradley, "it was generally rubbed on the parts which were the seat of pain, and afterwards below in the course of absorption."

"In every instance it appeared to be a remedy of great efficacy; but the disagreeable symptoms produced by it, caused many either to desert its use altogether, or to apply it unfaithfully."

"In recent cases the first or second application has often removed the complaint, but those which occur by far the most frequently are of long standing, in which it may often be necessary to persevere in the frictions for three or four weeks; and it is in these instances that we have cause to despair of the resolution of most patients *."

After remarking on the aversion of patients to the irritation of the pustules, Dr. Bradley continues:

"The pustules are uniformly compared by the patient to variolous pustules; but they are much smaller, not so red at the base, nor so tense and white when fully suppurated. The decided relief which is commonly experienced from this application during the first week, encourages patients in general to persevere pretty firmly for the first seven or eight days, at the end of which time the pustules become so numerous and distressing, that the remedy must be

* It does not appear that Dr. Bradley had any views beyond the mere irritation and inflammation of the skin. E. J.

unavoidably intermitted. This effect of the medicine in the above mode of application is the only objection that I have observed to the general use of it in sciatica, rheumatism, torpor, and partial paralysis. The cutaneous lymphatics seem to be very generally affected by it, but none of the deep-seated ones."

"When the first, or any subsequent eruption is entirely healed, a renewal of the frictions produces another in the same degree as before: whence we may conclude, that there is no occasion to increase the dose of the medicine on account of habit, as we do on many other occasions."

Also: "The above are the usual and general effects of the external application of tartarized antimony; but in particular instances some deviations or irregularities were observed. These I have not been able, as yet, to impute to temperament or peculiar habits, though I suspect the eruption to be more particularly distressing in the same persons that are predisposed to a violent small-pox."

"In about one case in ten the eruption did not appear; in these, however, there was cause to doubt of the fidelity of the application."

"In several cases the eruption was not confined to the course of the lymphatics, but appeared on very distant parts of the body." Dr. Bradley afterwards observes, "I believe a very free use of such frictions would produce a general eruption over the whole body."

"In one patient, who, I am convinced, did not rub in less than half an ounce in the course of one week, the itching and eruption were preceded by a general restlessness, and two or three times by a slight degree of nausea."

The most recent individual, as far as I am aware, who has written on the particular effect of tartarized antimony externally applied is Dr. Robinson, in a good paper on chin-cough *, in whose opinions it will appear that I coincide as to the mode of its operation being quite peculiar, and contrary to the more simple effect obtained from the application of a blister, which only raises the cuticle.

He speaks in the following emphatic manner of the general effect of tartar emetic in hooping-cough:—"To these observations I have to add, that of all the remedies I have found beneficial in hooping-cough, frictions upon the region of the stomach, with the tartarized antimonial ointment, have been the *most remarkably and most undeviatingly useful.* The eruption on the stomach is frequently accompanied with a slight degree of inflammation about remote parts in females, with a spare eruption of minute pimples; and on this occurring the disease uniformly begins to abate. In cases where the patient is of a full habit, and the inflammatory diathesis runs high, it may be proper to apply a few leeches to the feet previously to the use of the antimonial ointment. *But I have used it with advantage, even in cases where the fever*

* See "London Medical Repository," Jan. 1821.

was attended with delirium at night. I have never seen the eruption, produced in this way, threaten the bad consequences, from gangrene, which not unfrequently supervene when the blisters are applied too early in hooping-cough, when the inflammatory diathesis runs high, and before blood has been abstracted. The effects of the ointment in other respects are *also widely different. When it does produce an eruption, it almost always affords relief:* whereas I have never seen one instance where the application of a blister has been of the *smallest service* in hooping-cough, except after blood-letting, when there have been manifest symptoms of inflammation; otherwise I am fully persuaded blisters are often hurtful."

By the tartrite of antimony we can not only create vesicles, but we can do more—we have at our command an application which will at the same time both VESICATE, AND PRODUCE DISEASED ACTION ON THE SKIN ITSELF, BY DEEPLY DERANGING ITS STRUCTURE BENEATH THE SURFACE. This is probably one cause why the sympathetic affection excited by the use of cantharides, and those changes produced by tartar emetic, are very different.

If we enter into minute inquiry, do we not perceive that different natural diseases of the skin have their peculiar sympathies with the constitution, from causes which from analogy admit of imitation by the use of artificial irritants? First, have we not those diseases which take away the cuticle, expose the raw surface of the cutis, and excite a new diseased action on the abraded sur-

face, which then discharges a fluid apparently consisting of little more than serum, next a semipurulent, and, lastly, a discharge nearly purulent? Secondly, diseases or derangements in the cutis itself, which call a train of sympathies into action of a still more extensive and important nature: and, thirdly, the subcutaneous affections of the cellular membrane, which indeed do not admit, strictly speaking, of being directly classed with the pure diseases of the skin, though the skin becomes indirectly affected, as in boils or carbuncles? Hence then, in all probability, arise their complexity and extensive effects on the constitution.

Some of the most unsightly, obstinate, and widely-spreading cutaneous eruptions produce little or no constitutional irritation, nay, merely simple itching. For what reason? They are attached to the surface of the cutis merely, and do not penetrate into its substance. To the same causes is attributable the comparative mildness or entire want of secondary fever in varioloid affections, and in chicken-pox.

Many observations might be made upon the distinction between the mildness of small-pox in some cases, and its severity in others, which tend to support the above observation. A different degree of secondary fever will follow, when the skin is simply affected on the surface, and when it is partially destroyed beneath. The skin is a very comprehensive term: it may be said to consist of cuticle, cutis vera, rete mucosum, and its partial connection with cellular membrane. In my first work on the Vaccine, I pointed out

the different symptomatic and constitutional effects produced by variolous virus, whether inserted in such a way as merely to be lodged within the skin, or to pass through it, and to be lodged upon or within the cellular membrane*.

It having appeared in my own cases, and in those of others, that the relief afforded was almost invariably timed, not simply by the first blush of inflammation, but by the appearance of vesicles which contained *a secreted fluid*, and that these seemed absolutely necessary for the production of constitutional influence. Ought not, therefore, the imperfect state of our knowledge on this subject to excite our deep physiological inquiries, to endeavour to account for this extraordinary phenomenon ?

Is it not possible that in cases where the artificial vesicle has been of benefit to the constitution, that the effect has been similar to that by which Nature gives her aid in most instances where she produces spontaneous eruptions ?

Whoever has observed the deranged state of health where vesiculated eruptions have been called into action by an effort of Nature, must have seen how often they arrest the progress of the original disorder, and may we not from thence infer what appears to me to be a pretty general Law of Nature, that she often gets rid of diseased action affecting vital organs, by exciting eruptions in other parts not vital ?

* " Inquiry into the Causes and Effects of the Variolæ Vaccinæ." Third edit. p. 50—53.

I am aware that this doctrine is not entirely new or unobserved; but though the phenomena have been so often described, have we taken the hint in our treatment of diseases either chronic or acute? The humoral pathologists maintained the *metastasis* of diseases; but, instead of arguing that eruptive affections were *exchanges of diseased action*, they considered them to be the *drains* by which certain humours existing in a depraved condition of the circulating fluids were carried off.

The illustrations which I shall presume to offer relative to this part of my inquiry may be too limited, but I find it difficult to mark the boundary within which Nature acts. That people lose their catarrhs upon the appearance of eruptions on the lips, for example, is one of the most familiar of all facts of this kind. My friend, the respectable Dr. Fleming, formerly at the head of the medical department at Calcutta, and now a worthy Member of the House of Commons, to whom I have to acknowledge great obligations, told me, that he was formerly often attacked with catarrhs and intermittents; "In which," he said, "I took the bark frequently, but seldom got well till herpetic eruptions appeared on my lips."

Lest you should think what I say here at variance with what I have repeatedly said elsewhere respecting our sweeping *all* eruptions from the skin previously to, or at the time of, our inserting the vaccine lymph, allow me to bring to your mind the fact, that in this case we make a commutation only, as the influence of one

eruption is changed for another, for no sooner is the spontaneous eruption subdued, than the artificial (the vaccine) takes its place, and safely affords its influence. Considering these infantile eruptions as guards to the constitution while under various irritations, that of teething, for example, and others, I could on no other principle, with due attention to physiological caution, venture to supersede them *. Indeed they are sometimes converted by inoculation into vaccine vesicles. I may here observe, how frequently do we find fever, diarrhœa, or convulsions, follow tooth-rashes, if imprudently checked.

Dr. Ferriar, in his Medical Histories and Reflections, under that head in which he has treated of the conversion of diseases, has occasionally alluded so closely to the subject to which I am now calling your attention, that his opinions and observations may be very aptly quoted here, as being in unison with my own. He observes, (Vol. II. p. 69,) "there are many unexpected and dangerous conversions, in the class of exanthemata, from the eruptions, after they have been completed, to inflammation of the internal parts: that in erysipelas we are not yet acquainted with all the circumstances under which inflammation is translated from the skin to the brain" &c. After thus noticing these phenomena, he very justly says: "We perceive at once a great deficiency in medical science, and a train of inquiry equally curious and useful."

* See my Circular Letter, which has been widely distributed, and also inserted in many of the periodical journals within the present year.

"Cutaneous eruptions often extinguish dangerous diseases. Excepting the regular exanthemata, such conversions seldom happen in acute disorders. I have known acute rheumatism accompanied, in two cases, with efflorescences on the legs, but they seem to have no effect on the pains*. Madness and melancholy, epilepsy, delirium protracted after fever, dyspepsia, various pulmonary affections, are all observed to be mitigated or removed on the appearance of cutaneous disorders; especially on the return of those which, after becoming familiar, had been suddenly suppressed."

"In electrifying patients for obstinate cases of palsy, I have often remarked, that the patient received *no benefit till red, fiery eruptions were produced* on those parts of the limb which were surrounded by the chain."

The practice of making artificial eruptions appears not to have escaped the mind of Dr. Ferriar, but he speaks unfavourably of the result. His opinions on this particular point, however, are not perfectly satisfactory to me, for he has given no information concerning the irritants which he employed, nor whether his experiments merely produced vesiculated elevations of the cuticle, or went further. He says:

"Some Practitioners have imagined, that much could be done

* Here there was no vesicular eruption, which *in general* seems the favourite scheme of Nature for limiting the duration of peculiar morbid actions. E. J.

by producing crops of pustules on the surface by stimulant applications, in diseases of the lungs and the joints. My experience of this method furnishes no proof of its efficacy.

" Perhaps, as I have suggested elsewhere, a specific eruption is requisite, in such cases, more frequently than we are aware."

That a small cluster of vesicles, a simple vesicle, or even a serous oozing from an abraded surface, may produce a new general action, is not to be disputed. It has passed under my observation, times out of number, in cases of Vaccination. But here, I have some apprehension Nature will not always act so friendly a part as my ardent hopes induce me to expect. In one instance she produces the sort of eruption required to effect her purpose; in the other it is called out involuntarily. On this account, in non-exanthematous fevers, which have a mortal tendency, perhaps a variety of stimulants would be deserving of trial at the same time.

Dr. F. continues: " In general there is no safer conversion than that to the skin; the distance of the affected part from those necessary to life; the varieties in the state of circulation, to which it is habituated, and the easy application of external remedies which it admits, combine for the security of the patient; whenever a disease is fully translated to the skin, sudden conversions from the skin to the internal parts, are, I believe, universally dangerous, whether they interrupt the course of an acute or a chronic disease."

"Some affections of the skin, though they happen in consequence of acute diseases, seem to have no effect on the original complaint, such are petechiæ in typhus*."

"In the second case, published in the Medical Histories and Reflections, there is a curious instance of connection between an erythematous state of the skin and convulsions, attended with racking pain in the stomach."—P. 78.

In vol. II. previous to these observations, Dr. Ferriar alludes to some interesting cases.

"In one maniacal case, which succeeded an ill-treated typhus, the patient received no relief from medicines, till a broad yellow scurfy eruption† appeared about the crown of his head, which was bald. Successive crops of these eruptions delivered him completely from all remains of his mental disorder."—P. 46.

"I have noticed elsewhere‡, a remarkable case, in which epileptic fits were produced by the retrocession of the itch, in consequence of some external application. In that case the epilepsy resisted all the usual methods, and was only cured by re-producing the itch."

* See Remarks, pag. seq. on Plague. E. J.

† It must be recollected, lest I am accused of contradiction, that no scurfy appearance can manifest itself on the skin without its first assuming a fluid form. E. J.

‡ Medical Histories and Reflections, pp. 183, 184.

" Instances of the production of melancholy and madness by the suppression of eruptions, or the healing of old ulcers and habitual drains, are common in practical writers *."—P. 47.

" Tedious dyspeptic cases are often converted to cutaneous eruptions, in distinct pimples, of a fiery red colour; such eruptions extinguish the complaint in the stomach."—P. 50.

Huxham, in his Essay on Fevers, has related some general facts, which, though brought into compliance with the prevailing doctrine of his time, merit quotation. That part is particularly worthy of notice here which describes the consent between the lungs and skin, since it very materially assimilates with my own experience of the favourable effect of artificial eruptions in some pulmonary cases.

" Sometimes the morbid matter is critically translated to the lower parts, producing phlegmon, impostumes, erysipelatose or œdematous swellings, ulcers, &c.; particularly in persons formerly subject to swoln or sore legs, which are frequently noted to swell, or break up again, at the close of peripneumonic disorders, to the great relief of the breast. It is a well known thing, that on drying up ulcers in the legs suddenly, the lungs become forthwith affected; and that hydropic tumours of these parts, forced up by laced stockings, bandage, &c. immediately bring on asthmatic disorders."—

* Arnold, in his work on Insanity, has named the retrocession of cutaneous affections as a cause of apoplexy.

"When blisters applied to the legs in pulmonic diseases, *ulcerate severely*, they commonly give great relief; but they are often exceedingly difficult to be healed up. This was particularly remarkable in the years 1740, 1741, 1746, 1747. I then also observed, that if the discharge, from the ulcerated blisters, was suddenly suppressed, not only the cough and difficulty of breathing returned, but sometimes a very great purging, and sometimes very profuse sweats forthwith came on, &c."—"From some observation of this kind, it is likely the Ancients (who always carefully studied to follow and second Nature's endeavours) applied *acrid epithems*, as salt, mustard, &c. to the breast, back, and shoulders, in pulmonic distempers.—*It is certain there is a great consent between the skin and the lungs, as is evident in a repelled itch, small-pox, measles, &c. which immediately fall on the breast.*"—Pp. 220 and 221.

An apology is due for citing facts of such common occurrence, especially in the old authors, and the more general since they were so fundamentally combined with the doctrine of the humours; but though common, yet as your father observes, prefatory to numerous examples (see Elem. of Pathology, *chap.* Relation of Diseases by Conversion, a work of which the high importance is not enough appreciated); "they give very important information as to the nature and cause of diseases." The particular interest of these quotations does not consist so much in their simple pathological consideration, as in the mutual resemblance of the effects of the natural and artificial process.

In order that I may display in a still stronger point of view the analogy between the phenomena of artificial and spontaneous eruptions, and the peculiar operations which we may hope to imitate in certain states with successful results, allow me to bring to your recollection, in a few preliminary observations, the rise, progress, and termination of what is called an exanthematous fever. The small-pox will afford a luminous example.

Morbid animal matter, generated by this disease, is applied to the body either by what is termed the natural or artificial mode. After a given space of time, in either case, diseased action is manifested by that constitutional derangement which is designated fever. This goes on for a limited period, when eruptions appear on the skin, which soon shew on their apices vesiculated specks. Here the disease, as far as it depended on the *primary action* of the infectious matter which called it into existence, terminates. But now a new train of symptoms comes on, consequent to the diseased action excited on the skin by the *pustules*, the influence of which is felt in proportion to their numbers, their malignancy, the disposition of the constitution, and the extent to which they penetrate the skin. The fever, in the first and second instances, has two *distinct* origins. In the *first* instance, it arises from the influence of the morbid matter inhaled, or intentionally applied; in the *second*, from diseased action going forward on the skin, and, in many instances, also on the mucous membranes of the fauces, trachea, and ramifications of the bronchi. The rapidity with which, in some instances, the secondary diseased action follows the primary, often obscures the

distinction. Of this the ordinary phenomena of confluent small-pox and scarlatina exhibit familiar instances. In the first of these the skin is often so quickly and universally assailed, that there is, in most instances, no interval of cessation. Nature is in a hurry to call out her guards!

Let me here introduce some practical remarks upon the benefits which may be derived from sedative applications, where the pustules are formed so thick upon the cutis as to augment in a high degree the secondary fever. From the rare occurrence of small-pox in this district, I have had no opportunities of making the experiment myself, but on suggesting it to my friend Mr. Fry, he made trial of it in the case of a young woman, when the small-pox made its appearance in the town of Dursley some months since. This patient had a full burthen of distinct small-pox, and her countenance was loaded with pustules. In this state one cheek was sopped with liq. lythargyri somewhat more diluted than I intended, while the other was suffered to take its course for the sake of comparison. The consequence was, that although, from excessive occupation, this process was not repeated by Mr. F. the effect was nevertheless very manifest, for the pustules were so much checked in their progress to maturation, that they could be scarcely said to have maturated at all. This practice suggested itself to me in consequence of using lotions which possess a chemical, probably a coagulating influence over the secreted fluid itself, as well as the organic arrangement destined to form the secreting process, in cases in which the irritative inflammation that sur-

rounds the cow-pox pustule has a tendency to ramble too widely.—Of this I may cursorily observe, we shall hope to see no more if attention is paid to my instructions lately re-published.—The principle, I must repeat, consists in mitigating the secondary commotion in the constitution, by checking the activity of the pustules which excite it. How often have I seen violent febrile irritation in the constitution, arising from carbuncle and erysipelas, entirely removed by the use of these applications! In London, some years ago, I suggested repeatedly to the late Dr. Woodville, who had such opportunities at the Small-pox Hospital, and again to his successor Dr. Joseph Adams, in some of those desperate cases in which fatal results must inevitably follow when the disease was left to pursue its own course, to sop the skin, or even to wrap the patients in sheets wetted with liq. plumbi, but without exciting any practical attention. Even should this, or any other mode suggested by the hints thrown out, prove successful, *nature would probably require that we should leave here and there a cluster of pustules*, e. g. *on a leg or arm, or any other convenient part, to go through their course.* I am aware of the injurious influence of lead, as no one has seen more of it than myself, but, in cases like these, we are warranted in running a risk to avoid destruction OTHERWISE inevitable.

In advancing an opinion that the secondary fever in small-pox is of another kind to the primary, I believe that I differ from other authors. Dr. Cullen in his "First Lines" seems to speak as if he believed the secondary fever to be often a continuation of the primary

or eruptive fever. He says, " But if the secondary fever follow the confluent small-pox, and be a continuance and exacerbation of the fever which had subsisted before," &c. Sydenham, though led astray by the theories of the humoral pathologists, in his subsequent reasonings most correctly observed the phenomena and proximate cause of the secondary fever in small-pox. He says, " For after the most exquisite observation, the chief of all is, that in the small-pox, the *greatest safety* proceeds from the *paucity* of pustules, and the *most danger* from the *fullness* of them; and as they are *few* or *numerous*, so the patient *lives* or *dies*. I think it very easy to give an account why the patient is more or less endangered, according to the greater or lesser number of pustules, for every pustule is a *phlegmon*, THOUGH VERY SMALL, and presently imposthumates." P. 170. He afterwards correctly indicates the practice to which I have had recourse. " Wherefore, if the patient be not otherwise in danger (to omit for the present the bloody urine and purple spots) than by the great number of pustules, I diligently consider upon what account they come so full, and I endeavour, all I can safely, to restrain them, (Why then not keep them within a certain boundary by more powerful means than merely keeping the skin cool? E. J.) which indeed is the main business, and the best means to help the patient; for it is very hazardous to do any thing in this sort, when the disease is established." P. 271 *. Sydenham,

* " Pechey's Translation," Tenth Edition, 8vo. Let me refer the reader to the opinions of Huxham on the causes of secondary fever in small-pox, and its external treatment. " Essay on Fevers," pp. 136, 156, 157.

however, used no externals; it is evident he alludes to medicine and regimen.

The rule may be admitted as general, though not unconditional, that wherever fever is of such a nature as to have at first a bad tendency, the eruption appears quickly. In the confluent small-pox the eruption shews itself much earlier than in the mild, and in scarlatina sooner than in measles. In the measles the pulmonary affection accompanies every stage. Sydenham observes, " The symptoms of the measles do not abate by the eruption, as in the small-pox; yet I never observed the *vomiting* afterwards, but the *cough and fever increase* with *the difficulty of breathing*, weakness of the eyes, and the defluxion, or continual drowsiness." Sydenham, like all the other medical men of the day, observing the symptoms of fever going on in a continued train, from the period of accession till the termination of the whole disease, did not consider that one set of symptoms were the consequence of the primary action of morbillous matter, and the next train secondary, and the consequence of extended affection to new organs. May not the fatal disposition of plague be often owing to the eruption not appearing sufficiently early to prove salutary; and, even when it does appear, assuming only the form of small carbuncles? If carbuncles appear on the skin, and *give out a fluid* they do good, but are unfavourable if merely subcutaneous. Authorities are numerous.

As proof of the protecting power of spontaneous eruptions, though under peculiar circumstances the boundaries of protection may be

over-stepped, I need only to recall to your remembrance the distresses of the constitution when the eruption suddenly disappears; and the salutary changes immediately manifested on its re-appearance, in measles *. Even in small-pox, though the disease itself cannot possibly disappear wholly, the eruptions, when in a vivid state of maturation, may so lose their prominent appearance, as on a sudden to become flattened and excite distress in the constitution, which is often followed by fatal consequences.

I have seen cases where death has ensued, both in natural and inoculated small-pox, on the second or third day after sickening, when *no eruption had taken place.* In these cases the skin was in many parts marbled with broad livid lines, and in others there was ecchymosis.

When eruptions appear early which have not the proper vesicular character, the indications are the reverse of being favorable. Cases of small-pox occasionally occur, in which, during the period of sickening, the patient is seized with the usual symptoms; in the

* It may be hastily objected, that neither measles nor scarlatina produce serous eruptions, but this would be erroneous. Vesications in both diseases sometimes appear, particularly on the inside of the fingers. It may not be known as a common fact, that the concreted matter, which falls some time afterwards from the skins of persons who have had measles or scarlatina, is a common source of the communication of disease from one individual to another. A young gentleman who had had scarlatina at school, was a particular proof of this occurrence. After repeated changes of linen, he was sent to the house of a relative as convalescent. He often amused himself with blowing the scaly powder which had formed on his skin upon the faces of other children and attendants, to whom he thus spread the infection.

course of a day or two these symptoms are aggravated, and the skin, instead of throwing out pustular eruptions, becomes covered with vibices and purpura, accompanied with hæmorrhages. Whenever this is the case, the patient invariably sinks suddenly. These facts, though not familiar, were well known to those who were in the habit of observing small-pox, when it was more general than now. Sydenham has described analogous results in cases of the plague *. The best-informed authors also tell us, in this disease, that when the skin is beset with boils (a species of eruption which is soon attended with a serous fluid on the apices), the danger of a fatal termination is by no means so great as when there is no cuticular disease of this description; and that, when indurated lumps occur, which are only to be felt under the skin, and do not rise above the surface, no benefit follows.

The *permanent* protection by which the constitution is guarded from secondary attacks in some eruptive diseases, which in a general way appear but once, seems to be derived, not like the temporary protection against the commotion excited in the constitution, from the action of the matter generated on the skin in the form of pustules, but from the primary action of the matter on the constitution exciting the primary fever, whether derived from infection received by exposure, or by artificial application. They who have had the variolous fever without the variolous eruption have resisted the infection afterwards, as in ordinary cases. Seeing then that

* See Swan's edition of Sydenham, 1753, pp. 77, 78.

small-pox, scarlatina, and many diseases highly alarming at their onset, for the most part either terminate, or are much mitigated, on the appearance of an eruption, it may be submitted as a postulate, whether the tendency of many diseases, arising from the action of animal poisons brought in contact with the human body, does not in general, from want of such aid from nature, observe a more fatal course? If the proposition which I have ventured to advance, that the sympathy of the constitution with artificial eruptions has in many instances been characteristic of the sympathy between the constitution and skin, in the generality of those cases in which vesicular eruptions appear spontaneously; and if the phenomenon be finally confirmed by additional experience, that their action is therefore different in most instances from the more simple effect obtained by the application of those substances, which are termed counter-irritants, such as simply irritate or even vesicate the skin,—may not our endeavours, founded on what I have before stated, be made to excite such sympathies with advantage in those febrile diseases which come under the appellation of Non-exanthematous?

In an early publication, whilst I was writing on the subject of Cow-pox Inoculation, I threw out a hint: "As we have seen that the constitution may be made to feel the febrile attack of cow-pock*, might it not in many chronic diseases be introduced into

* I have in the Treatise referred to, called it *febrile attack*, but the term *influence*, as it is not strictly febrile, would have expressed my meaning more correctly; for at that early period the effects of co-existing herpetic eruptions were not clearly known to me. The

the system, with the probability of affording relief upon well-known physiological principles?"

It is a matter of interesting speculation, in what way the sympathy is created between the constitution and the skin, and how the former feels the influence of spontaneous eruptions. Is it not, in all probability, through the medium of the brain and nervous system? The disposition in the brain to receive unfavourable impressions from ill-timed suppressions of cutaneous affections, is a reflex action favourable to my supposition; and I may again remind you of the ostensible connexion of the brain and nerves with the appearances on the skin in the exanthemata. Secretion is an important function, undoubtedly regulated by nervous influence, and by making supernumerary and often temporary secretions, as by extraneous eruptions, may not certain laws of morbid actions, producing results similar to those reasoned on by Mr. Hunter, be the most general purport of their appearance? May we not, by making new diseases, check the progress of disease in a vital organ or in a part where it may be unmanageable, by substituting another which is under our controul?

I conceive, that not only the typhus and yellow fever, and other acute diseases unattended with eruptions, rheumatism for example,

vesicle on the arm and surrounding skin is apt to participate in their nature, and it is from this source that febrile commotion manifests itself in the constitution, and not from the vaccine vesicle, when it goes through its course with regularity.

might be comprised within the sphere of our experimental attempts, but that many other affections may also be included, in which the brain and nerves are primarily disordered. Suspecting also, from various coincidences, that dysentery in the first instance is an affection of the brain, and that the visceral derangement is merely consequential (I cannot here go into detail), I should try the ointment as a remedy, if opportunity offered.

Before I proceed farther with my opinions regarding the influence of artificial eruptions in fevers, &c. it may not be amiss to go into a short inquiry, which may probably be thought interesting; *viz.* the resemblance of certain diseases, which are most strongly characterised by symptoms of a disordered state of the brain and its appendages; as violent catarrhs, which I too well know may be called typhoid, having too often experienced both typhus and contagious catarrh myself. I have long suspected, from comparative dissections, that the sinuses are more in fault, as I shall explain, in the worst species of catarrhs and typhus, than we are aware of. How often have we known typhus removed by an early hæmorrhage from the nose; but who thinks afterwards of going further, and examining these parts attentively in those cases which terminate fatally? Allow me to remind you, that your post as physician to more than one large hospital, may possibly afford you an opportunity of elucidating this point *.

* See my paper on the Dog Distemper, Medico Chirurgical Transactions, Vol. I. pp. 263, 264.

You will recollect our conversation respecting *staggers* in the horse. In every case which I could meet with (and I am happy to say there were not many), I found the symptoms and appearances bearing a strong resemblance to those in the dog distemper. In one case two or three ounces of coagulated blood was found adhering to the mucous membranes of the triple sinuses—a proof of extreme turgescence, the surrounding parts were excessively inflamed; but there was no corresponding state of the brain, which could account for the violent delirium which preceded death. Can the brain *itself* ever be inflamed, or is inflammation within the skull confined to membrane only? The near connexion between the nerves expanded over the sinuses and the brain need not be pointed out to you. I some time since had an opportunity of watching the progress of hydrophobia in a dog, for several successive days, till he died: the appearance of this animal, on dissection, and of that which dies of the *dog distemper*, bore a nearer resemblance than I expected to find. Inflammation was certainly apparent on the membranes lining the sinuses at the basis of the skull. But though the analogy between the two diseases is stronger than is generally supposed, it must be recollected, happily for the human race, that the morbid matter secreted in the *distemper* will not produce hydrophobia by effluvia or contact.

What would be the effect of experiments conducted on the principle of making new cuticular diseases not only in non-exanthematous, but in certain diseases generated by animal poisons, which I am aware are not classed with fever? For here analogy lends

its aid. Many animal and vegetable poisons, taken into the stomach, very quickly excite eruptions on the skin, and thus obviate their deleterious tendency *.

Although the efforts of medical men have been assiduously employed in seeking a remedy for that horrid disease hydrophobia, yet it is lamentable to think, that under every present mode of treatment, the death of the patient has, as far as my information hitherto extends, invariably attended the occurrence of the disease. But shall we abandon hope, and rest satisfied that every avenue which affords the least probability of leading to success has been explored? Though the mode of treatment has, in almost every instance recorded, been a mere repetition of one or other of those that previously proved useless, yet let not our researches here terminate. Humanity, the honour of our profession, a thousand considerations still make a loud appeal to us for further efforts. No malady incident to the human body has a more imperious claim on the utmost efforts of medical ingenuity:—a malady that carries terror in its very name! On a professional subject of such vast importance, believe me, my dear Charles, my mind has not been

* Those clusters of subcuticular effusions which constitute irregular elevations on the skin, which have been termed *Nettle Rash*, and which are so often and so suddenly called into action, may be considered as belonging to this class of preservatives. Although their appearance is so very sudden, yet I do not see how they can arise but from a derangement in the action of vascular structures which admits of extravasation. One has this appearance after eating shell-fish, another after eating mushrooms, and so on. But in every instance there seems to be a peculiar feeling of distress about the stomach, frequently accompanied with some affection of the head.

idle; but having never, like my valued friend your father, (who favoured the world by his admirable observations on the subject, and whose lamentable indisposition none deplores more than myself,) seen a case of hydrophobia in the human subject, I can of course have nothing to offer which is not merely speculative. However, may we not consider the success which has resulted from the trial of the artificial vesicle in the cases which are here related, sufficient to justify the effort to obviate the fatal tendency of hydrophobia, by attempting similar diversions in the animal economy.

You know, from conversations which I have formerly held with you on the subject, that I have long considered tetanus, arising during the presence of an external wound, as one of the diseases which owes its origin, like hydrophobia, to a morbid poison, brought in contact with the skin, and generated by some spontaneous process in the part affected. Ascribing it to mere irritation, I conceive, with all deference, is not admissible. That tetanic symptoms may arise from simple irritation, I am aware, as in hysteria, but this species is without danger. Very probably those cases of tetanus, caused by a wound of a nerve or tendon, are excited also by simple irritation. Have we not seen fatal tetanus occur after amputation, when the stump has been nearly healed, and the constitution apparently sound? As we must admit that the glandular apparatus within the fauces of a dog, which to-day secretes a bland and innocuous fluid*, can to-morrow, by an alteration in the

* See remarks in Inquiry into the Causes and Effects of the Variolæ Vaccinæ.

process, secrete a deadly poison, so we must, I conceive, admit that bland pus on the healing stump may, in as short a space of time, become so altered in its qualities, by the vital machinery, that its contact cannot be borne without these terrible commotions in the constitution. Recollect the case of our poor friend Ludlow, who lost his life in this way from the puncture of a thorn in the finger. In this case the mere irritation arising from the wound was so trifling, that he had not even given himself the trouble of extracting the thorn, till after symptoms of trismus had actually appeared. Recollect, too, the marked similitude of this disease to the hydrophobia, and that the sufferer expires after the same lapse of time in one instance as in the other *.

As in hydrophobia I deem every new and rational expedient, really worthy of serious consideration, I would also invite attention to some efforts made through the grand sympathetic connexion of the cutis with the brain and nervous system, in tetanus.

* It may be said that this theory does not explain the causes of spontaneous tetanus; but it must be observed that a pimple, deranged in its action by any external interference, under peculiar circumstances, might produce it; for, in this insfance, as in any of a less minute kind, a healing process must necessarily go forward. The spontaneous origin of tetanus is, at all events, a subject of much doubt. Dr. Colles has ingeniously maintained that the trismus nascentium and traumatic tetanus are the same; the former arising from the suppuration of the umbilical cord. In proof of his assertion, he has pointed out that the Negroes of the West India Islands, among whose infants the disease was particularly fatal, scarcely know it, since they have been habituated to dress the divided surface with the sp. terebinth. and use cold bathing afterwards daily. See Dublin Hospital Rep. Volume I.

In the present uncertain state of our knowledge of this subdivision of physiological inquiry, we can prefix no limits to the range of these influences.

At all events, whatever may be the results of more experience in these or other diseases, if you think them worthy of it, you have my permission to submit these hints to public attention; conceiving, that if it were merely to publish the advantages which have resulted, in the cases given, it would have been wrong to withhold them from the world. As the practice has been successful in so many instances occurring to myself, as well as other practitioners, the event cannot with justice be imputed to coincidence.

Do not let us forget, that alteration of structure, and diseased action, are two distinct things, though one may produce the other: but it is with diseased action that we must hope to grapple with success by our present plan. I must here observe, that where a vital part be so deranged that it may be said to have fallen into ruins, little can be expected from this or any other plan of treatment.

With regard to modes of adapting the strength and management of the application to the peculiarities of the case, my knowledge is at present imperfect. The formula which I have used, in the foregoing cases has been for the most part as follows,—but I sometimes find it necessary to make it more active.

℞. Antim. Tartrat. (subtil. pulv.) ʒ ij.
Ung. Cetacei, ʒ ix.
Sacchari Alb. ʒ j. *
Hydr. Sulph. Rub. gr. v. M. fiat Unguentum.

The time cannot be precisely fixed in which it will perform its office, as it will in some degree be regulated by the irritability of the skin and the disposition of the constitution. A patient applied the ointment according to the preceding formula, at night, and had eruptions next morning, which was within a space of twelve hours. He had, however, used the same on a preceding occasion in cold weather, and with a skin less perspirable: in this instance it was much tardier in vesicating. Perhaps the application of a cupping-glass, or a sponge dipped in hot water, or even friction, before using the ointment, would be advisable, where the skin indicated torpor; but the water must be carefully wiped away previous to the application. If its speedy action is required, as in tetanus and hydrophobia, to give it a fair chance it would be adviseable that trials should be made on the thin cuticle behind the ears, as well as on other parts.

In the case of a lady, where two parts of the tartar emetic and one of simple cerate were used, eruptions appeared in a few hours.

In this case I used the ointment in a great degree of strength, perhaps its greatest; but though, by these means, I have usually

* Sugar prevents the ointment from becoming rancid.

expedited the eruptive process, I have been in some instances foiled. This may be owing to mismanagement of the preparation, or its application. Dr. Bradley, in his paper, says, that he ordered a scruple of tartarized antimony to be reduced to a fine powder, moistened with water, and to be rubbed in at bed time; sometimes half a drachm. He thus states the effect, which was certainly not expeditious by this mode: "On the *second or third day* after the course has commenced, the patient is harassed by a sense of heat and itching in the part rubbed, or in the course of the lymphatics towards the thoracic duct. If the part so affected be rubbed, or in any degree irritated (from which few can refrain at first), an eruption of small watery pustules takes place *immediately;* and if the patient, taught by experience, abstain from irritating the part, the eruption will nevertheless appear, though somewhat *later* and in smaller quantity." Such particulars are of importance, especially with relation to hydrophobia, where it must necessarily be useless, and the faint hopes which I entertain of its benefits be frustrated, unless the effect be expeditiously produced. The irritability of the skin varies so much, even in the same individual, that the interval of its action cannot be easily determined. In the case of a gentleman, who is subject to slight epileptic attacks, which have been much mitigated by it, the influence of an irritable state of the brain upon the skin, is beautifully shewn; for, when free from any pain or affection of the head, pustules cannot always be produced at all; but whenever he has a return of his disorder, they shew themselves very soon after the application is made*. In

* See a contrasted state of cuticular irritability, noticed in note, p. 14.

hydrophobia and tetanus the greatest attention should be given to expeditious methods of producing the effect. The extent of surface on which it was applied, in the maniacal cases, was rather ample. (See Cases.)

The stimulus of the eruptions should be kept up for some time after its first effects have been exhibited, which may be done with facility; and I do not find that patients, when a little habituated, much regard it*. Sometimes it will be necessary, as is shewn in more than one of the cases. Small quantities of a more diluted ointment, by re-application to the same part, will answer the purpose; but, if that be too tender, it may be advisable to renew it on some other. It will be also necessary to let the pustules die away gradually, as the sudden loss of their specific stimulus may be injurious to the constitution. We have yet to ascertain whether it is essential on what particular part it is applied, and whether the sympathies arising from applications made on different parts admit of distinction. We must consider nearly all that is now said respecting its application as merely pointing out a stepping-stone, and not absolutely conclusive. There may be other applications, which may produce pustules more expeditiously. I have

* A Gentleman who derived great benefit from the use of the ointment in a case of severe chronic rheumatism with lumbago, informed me, that the troublesome itching he felt from the vesicles in the course of their progress was effectually allayed by the use of the following cerate, spread on linen, and applied to the part.

Melt together equal quantities of unsalted butter and bees-wax. Let it remain over a gentle fire as long as any scum arises, which must be carefully taken off.

known vesicles brought out by a liniment of sulphuric acid and oil, but without having the same influence, *because their consitutional action is probably different.* A recent communication, sent me by Mr. J. Fosbroke, who has interested himself in my ideas made known to him on the subject, contains experiments on these latter heads, which, as far as they have gone, are very satisfactory. He writes :—

" I have not neglected to seize opportunities of repeating your experiments with tartar emetic in different affections, with some variations in the formula. The results, as follow, were taken clinically, with minute and particular attention. An ointment of tartar emetic, formed by uniting as much of this salt with the savin cerate, as half an ounce of the latter would envelope, was tried by me, in the case of a young lady who laboured under hysteria, and latterly under that degree of torpor of the abdominal viscera, from sudden cerebral compression, probably about the origin of the nerves, that the state of the bowels might be said to amount to temporary paralysis. Early in her complaint, and before simple hysteria was succeeded by those vehement irregular determinations which produced the worst symptoms, the ointment was thus used, and vesicles appeared within twenty-four hours; but at first excited no predominant sensations. On the following day, the 11th of March, the cutis was so generally under the influence of the action of this irritant, that eruptions had made their appearance with heads containing a serous secretion about remote parts; of these she complained, and also of extreme irritability of the skin, and soreness at

the bend of the arm, where it was applied on account of the thinness of the cuticle and susceptibility of the part. Though in a case like this, of complicated constitutional disorder, every action could not in anticipation be subdued by the influence of a solitary remedy; yet we all observed a cessation of hysterical aberrations after the developement of the vesicles. When they had died away, the *risus hystericus*, and some other phenomena of this state of constitution recurred. I then re-applied the ointment at the nape of the neck, where a blistered surface had recently healed. This was done at night, and before the following morning vesicles began to form, and an abatement of the hysteria followed. In a second case, in which the patient was affected with those morbid sympathies of the head, joints, and muscles, which have been observed where the mucous linings of the intestinal canal are clogged with vitiated mucus, in consequence of over-action of an irritative rather than inflammatory nature, the same form of the ointment was used, not, however, so much on account of these symptoms, which merely represent the case partially, as of others affecting the chest, from a similar condition of the bronchia. His respiration had been so impeded by these lodgments of mucus, that he had been attacked by symptoms like those of spasmodic asthma, and considered by a preceding medical adviser as possessing this complaint in an incurable degree, a prognostic, however, which certainly proved fallible. Suspecting if disordered function of the skin might have had any share in the patient's malady, I made inquiry whether he had ever had any eruptive affection about him, he told me, that two years ago he had had pustules about his body and face

with watery heads, afterwards becoming purulent. He was persuaded by a medical practitioner that his disorder was the itch, and was cured by external applications in consequence of this opinion. After this time constitutional disorder came on, and whenever his skin became dry and torpid from chills, his complaint increased.—I give this detail in proof of the axiom which you have laid down, that "diseases of the skin are diversions in the animal economy for transferring diseased action from parts vital to parts not vital." —I remember the expression too with which you continued, "that every pimple with a vesiculated head has an errand to perform for the benefit of the constitution."—The ointment was applied, and pustules in a full crop came out *in four hours*, very large and full of fluid *. This will be gratifying, as you expressed much anxiety for the early appearance of vesicles in the experiments which you have proposed in tetanus and hydrophobia. The patient at the same time took the Acet. Colchici, neutralised with magnesia, and tartar emetic, which dislodged great quantities of mucus and slime in both lines of the mucous tracts, the pulmonary and intestinal. Under the combined influence of these he improved rapidly, and is now recovered. An accident in practice has enabled me to exhibit the active powers of this external stimulus in a strong point of view. A blundering fellow, from self suggestion, carried a box of the ointment intended for one patient to another, with an irritable ulcer on the forepart of the tibia. He delivered it to the patient

* The part infricted was the scrob. cordis, which I have reason to think is very susceptible, and a very general situation of herpetic vesicles.

with this significant recommendation, "Here is the very right thing itself." The daughter of the patient, pleased, according to feminine refinement, with the delicacy of the colour, and no proselyte to the Virgilian adage of, "*Nimium ne crede colori*," immediately applied it with extraordinary promptness, and very cheering auguries of the beneficial influence of the remedy *expectante*. But the disappointment that followed almost baffles description. Though washed off with immoderate ablution and pains and haste, far exceeding that with which it was applied, the muscles were thrown into violent spasmodic contractions, adequate to render the patient apprehensive that the foot would quit the leg. Poultices being put on, the irritation abated, but did not entirely subside until the patient had sustained a severe rigor.

This case recalls to my recollection one related by Sir Astley Cooper in his Surgical Lectures, where similar spasm of the muscles attached to the vertebral column followed its inunction in this region of a strumous subject. I applied the ointment in a fourth case of very acute inflammation of the mucous membranes of the bowels. It was rubbed a little above the umbilicus, where pain was most severely felt, over scarifications purposely made by the usual instrument, a cupping-glass being previously put on. I saw the patient eight hours afterwards, and vesicles had formed of large diameter round the edges of the incisions. Next day they became excessively painful. The centre now contained a black depression, appearing like an incipient sphacelus, or that sort of black eschar which happens when the cutis has been killed by burns. The pain

endured was short, but *very severe.* A poultice was applied, which gave ease; and from this time the vehement pain and straining of the bowels rapidly subsided. I am inclined to think that the ointment made a great impression on the diseased action, but active treatment in other respects being conjoined, it would be partial, and perhaps erroneous, to attribute success to it alone. A brief relapse took place in this case, when scarcely any thing more than the ointment was had recourse to, and the malady rapidly subsided. I am satisfied, however, that this mode of application is best calculated to ameliorate *extreme* cases quickly and essentially. But I have seen enough to recommend caution in so using it in the cases of children, that is, over scarifications in epidemic affections, and in very irritable and debilitated constitutions. The second day's age of the pustules is the period at which they appear to pierce the cutis and affect the constitution most decidedly."

The following letter from my relative, the Rev. G. C. Jenner, came too late for insertion in its proper place; but, as its contents are so interesting, you will not dislike seeing it where it is.

My dear Sir,

The benefit which I have received from the use of tartar emetic ointment, in a troublesome complaint of vertigo, with

which I have been affected for several years, has induced me to pay a more minute attention to the salutary effects of that remedy. The following case, which occurred under my immediate observation, affords such a striking and unequivocal proof of its efficacy, that I could not forbear communicating it, as perhaps it may not be too late to be added to the testimony you are about to publish on this highly interesting subject.

William Holloway, ætat. 26,—Very tall, and of rather a spare habit, about the end of December, or beginning of January last, was attacked with violent pain in the left side, and considerable swelling about the region of the liver, with most of the usual symptoms that attend hepatitis, together with others indicative of pulmonary affection. He was bled, blistered, and took various medicines, under the direction of several medical gentlemen in the neighbourhood. These remedies afforded him a temporary relief; but he soon grew worse, and his malady continued to increase for six weeks, when I mentioned his case to you. By your advice, I furnished him with some of the ointment of tartarized antimony, and directed him to rub it on the chest. In twenty-four hours, eruptions appeared. The enlargement about the liver soon began to subside, the pain abated, and at the expiration of a month he was able to follow his usual occcupation of a mason and bricklayer.

In September last, during the unsettled weather, he went to assist a neighbour in securing his corn; when, after using great

bodily exertion, and drinking freely of cider while he was very warm, he felt himself much indisposed, and in two days afterwards was seized with chills. The pain in the side returned, attended with pain on the top of the shoulder and in the chest, shortness of breath, cough, quick pulse (I never found it under 120), and great debility. He now used the ointment, unassisted by any internal remedy. He received it from me with the most enthusiastic rapture, and used it more profusely than I intended, not only on the chest, but on the shoulder, and wherever he felt pain. A large crop of pustules was the result, which maturated, and continued to discharge plentifully for nine days, when he was able to resume his work, and is now free from all complaint.

I intended to have given you the particulars of this man's first illness; but I thought, as he took a considerable quantity of medicine, his recovery might have been attributed to that, and not to the ointment. In his second illness, the advantage from the ointment was decisive.

I may here remark, that a twofold benefit was derived from the use of the remedy. One part belonging to my province as a clergyman, and the other to your's as a physician. He was so sensible of the mercy of Divine Providence, bestowed on him through the means of the ointment, that, from being addicted to drinking, and consequently idleness, he is become sober, serious, and industrious; and I hope no temptation will lead him to relapse into his

former vicious habits; for if he does, it is more than probable a return of his bodily complaints will soon after be the consequence.

With my best wishes,

I remain,

ever truly yours,

G. C. Jenner.

Stone, Nov. 10th, 1821.

P. S. I was very particular in the selection of the tartarized antimony (emetic tartar) I made use of. It was prepared from your original recipe, published many years ago, in, I believe, "The Medical Communications."

I would here remark, that the Tartar Emetic which I am using is prepared according to a recipe formed and published by myself thirty years ago. By a very simple process it is done with ease and uniformity, admitting of two degrees of purity; the highest, which furnished it in a chrystalized form, being merely a slight extension of the method. Perhaps that afforded by the College is fully efficacious *.

Permit me, by way of conclusion, to recapitulate the principal points of inquiry which are here submitted to your consideration for more complete elucidation.

* See the Transactions of a Society for the Promotion of Medical Knowledge.

1st. The peculiar influence of factitious eruptions, in contra-distinction to simple counter-irritation.

2. To what extent the sympathy of the constitution may differ in eruptive affections which are confined to the surface of the skin, and in those which perforate it.

3. The applicability of the conclusions to different methods of varying artificial eruptions, with the view of calling into action the different degrees of sympathy.

4. How far the peculiar constitutional influence results from the *eruptive* form of the local irritation excited, and is analogous with the laws of secretion.

5. To what extent the analogy between artificial and spontaneous eruptions, in the exchange of diseased actions, obtains.

6. How far the brain and nervous system are the media through which spontaneous eruptive diseases, and artificial eruptions, influence diseased action.

You are to consider what I have here given you as a concise history of the effects of tartar emetic on the skin, as far as I have hitherto considered it as important. Many more cases than I have

here detailed have recently occurred, some in their nature so very interesting, that I can scarcely avoid presenting them. Take, if you please, the following outline of two of these, with a promise that you may expect them given more fully, as they are so very important, on a future day. One is a case of hysteria, in a young lady of a peculiarly delicate constitution, and attended with symptoms of rare occurrence in this disease. The morbid sensibility of the spinal cord, from its extremity to the brain, was so evident, that merely walking across a room, if her steps were not cautiously attended to, gave an intolerable jarring sensation, from the lower portion of the spine to the brain itself. It was of three months standing, and she had been attended by gentlemen of highly distinguished eminence in their profession; — but the ordinary remedies availed little. The other was a case of scrophulous ulceration and thickening of the pereosteum of the left fore-arm, which, in spite of those remedies, deemed most efficacious, had been gradually advancing nearly for the space of three years, and very little hopes were entertained of the limb's being saved. Seeing the efficacy of the artificial pustule, in internal derangements of the vital organs, I recommended the patient to apply the ointment on the sound arm. After it had produced its usual effect a few days, the wounds assumed a new aspect, and the healing process went on with such wonderful rapidity, that at the expiration of a little more than a month, one out of three wounds was healed, and the other two fast approaching towards it, with a sensible reduction of the thickening of the periosteum; but here, for

the present, I must drop the subject, and hasten to subscribe myself,

My dear CHARLES,

with best wishes,

your faithful friend and servant,

EDWARD JENNER.

Berkeley, Nov. 1821.

John Nichols and Son, Printers,
25, Parliament-street, Westminster.